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OFFICE MACHINES USED IN BUSINESS TODAY, AN ANNOTATED AND CLASSIFIED BIBLIOGRAPHY FOR THE YEARS 1938 THROUGH 1964.

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DESCRIPTORS- *ANNOTATED BIBLIOGRAPHIES, *OFFICE MACHINES, *BUSINESS EDUCATION, OFFICE OCCUPATIONS EDUCATION, OFFICE PRACTICE, HIGH SCHOOLS, BUSINESS, OFFICE OCCUPATIONS,

BUSINESS EDUCATORS CONTEMPLATING CHANGES IN THEIR OFFICE MACHINES EQUIPMENT OR CURRICULUM AT THE SECONDARY LEVEL MAY USE THIS BIBLIOGRAPHY WHICH WAS DEVELOPED AS PART OF A RESEARCH PROJECT TO DETERMINE THE SPECIFIC NUMBER AND TYPES OF OFFICE MACHINES IN A TYPICAL BUSINESS COMMUNITY, THE TYPES OF EQUIPMENT THAT WILL BE PURCHASED WITHIN THE NEXT FEW YEARS, AND THE TRAINING DEMANDED BY THE EMPLOYING COMMUNITY OF PROSPECTIVE EMPLOYEES. THE 218 ANNOTATED ENTRIES ARE CLASSIFIED AS ANALYSIS, BUSINESS SCHOOLS, CALCULATORS, CONCEPTS, COURSE OF STUDY, CRITICISMS, COOPERATION WITH BUSINESS, DISTRIBUTIVE EDUCATION, AUTOMATION, EQUIPMENT, EXPERIMENTS, FUTURE, GOVERNMENT, HISTORY, MENTAL CAPACITY, BUSINESS, MANAGEMENT, MEASUREMENT, TEACHERS, PHILOSOPHY, RECOMMENDATIONS, RESEARCH, SECONDARY EDUCATION, SURVEYS, STANDARDS, TRENDS, AND TRAINING. BOOKS, MONOGRAPHS, PERIODICALS, MASTER THESES, DISSERTATIONS, AND STATE AND UNIVERSITY PUBLICATIONS ARE INCLUDED. (PS)

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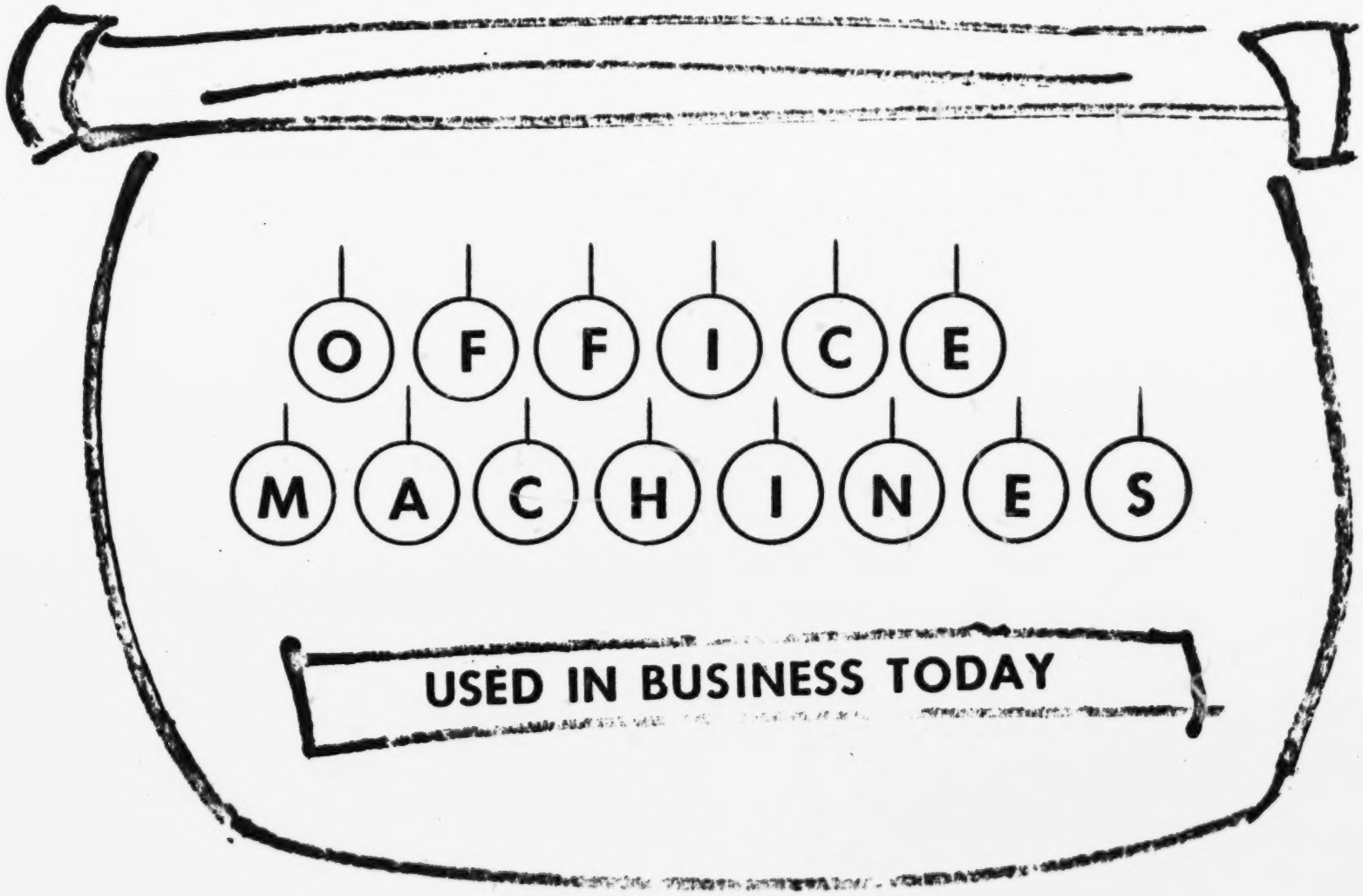

AN ANNOTATED BIBLIOGRAPHY

DEPARTMENT OF BUSINESS AND DISTRIBUTIVE EDUCATION
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OFFICE MACHINES USED IN BUSINESS TODAY

An Annotated and Classified Bibliography
for the years 1938 through 1964

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INTRODUCTION

This bibliography was developed as part of a research grant from the Michigan Department of Public Instruction to the Department of Business and Distributive Education at Wayne State. The project was directed by Dr. Fred Cook and Dr. Eleanor Maliche.

The purposes of the study were to determine:

* the specific number and types of office machines in a typical business community
* the types of equipment that will be purchased within the next few years
* the training demanded by the employing community of prospective employees

Mrs. Bess Behnke, a Wayne State University graduate student, researched the literature from 1938 to 1964 and developed the following classifications and basic annotations.

Key to Symbols Used in the Classification of Each Item:

ANLS	-	Analysis	IQ	-	Mental Capacity
BSch	-	Business Schools	JOB	-	Business
CALC	-	Calculators	MGT	-	Management
CON	-	Concept	MST	-	Measurement
CRS	-	Course of Study	NST	-	Teachers
CSM	-	Criticism	PHL	-	Philosophy
CWB	-	Cooperation with Business	RCM	-	Recommendations
DE	-	Distributive Education	RES	-	Research
EDP	-	Automation	SEC	-	Secondary Education
EQT	-	Equipment	SRV	-	Surveys
EXP	-	Experiment	STD	-	Standards
FTR	-	Future	TRD	-	Trend
GVT	-	Government	TRG	-	Training
HST	-	History	NO AN	-	No Annotation

There's an increased interest on the part of secondary schools to develop or expand their office machines programs. This interest has been intensified by the Vocational Education Act of 1963. We believe this bibliography and the study will prove of invaluable assistance to any administrator or business department chairman contemplating changes in their office machines equipment or curriculum.

For information concerning the Office Machines Research Study contact:

Fred S. Cook, Chairman
Business and Distributive Education
Wayne State University

OFFICE MACHINES BIBLIOGRAPHY

(Annotated)

Part A - Books and Monographs

Code

1. Agnew, Peter L. Office Machines, Vocational and Professional Monographs. Boston: Bellman Publishing Company, 1941. JOB-STSM

   This monograph contains a good job analysis for the adding-listing machines and calculators, as well as the qualifications for operators and usual learning times required.

2. Agnew, Peter L. and Nicholas, J. Cornelia. Office Machines Course, 3rd. ed. Cincinnati: South-Western Publishing Co., 1962, 124 pages. SEC-CRS

   Describes full-keyboard adding-listing machine, ten-key rotary, and key-driven calculators.

3. Harms, Harm. Methods in Vocational Business Education. Cincinnati: South-Western Publishing Co., 1939. TRG-STSM

   Chapters 8 and 9 of this general methods book survey the area of office practice and include plans for office machines courses, suggestions for equipment, and standards of attainment.

4. Kephart, William M. Liberal Education and Business, by James E. McNulty, Earl J. McGrath. New York: 1963, 110 pages. Bibliography pages 91-110. PHL-SEC

   Published for the Institute of Higher Education by the Bureau of Publications, Teachers College, Columbia University.

5. Liles, Alton B. Parker. Some Factors in the Training of Clerical Workers. Delta Pi Epsilon Award Publication, 1947, Oklahoma A. & M. College, 1949. TRG-STSM

   A study of clerical workers in Atlanta, Georgia, paralleling in parts the study made by Thelma M. Potter. The findings for machine operators were practically the same in both studies.

6. Nichols, Frederick G. Commercial Education in the High School. New York: D. Appleton-Century Company, 1933. PHL-STSM

   In this general philosophy of business education book there are some references to machine training with particular mention of the findings in Nichols' earlier study, "A New Conception of Office Practice."

7. NOMA, St. Louis Chapter. Blueprint for Business Education, Monograph No. 65. South-Western Publishing Co., 1946. SRV-STSM

   This is a report of a survey made in St. Louis of the city's needs in the area of business education in the public schools.

8. NOMA, Seattle Chapter. Business Education--The Door to the New Frontier. 1947. SRV-STSM

This report resulted from a survey made of the office in Seattle to find their present and future needs for employees, and the implication of such needs for the Seattle schools.

9. Occupational Outlook Handbook. Bureau of Labor Statistics, Department of Labor. 1963-64, pages 267-85. (Career information for use in guidance.) JOB-FTR

About 10 million people did clerical or some closely related work in 1963. High school seems to be the requirement but on-the-job training is given, and for some jobs, the employers send the applicant to a special school for training. The outlook is good in this field. It is estimated that by 1975, close to 4 million more people may be doing work of this kind than in 1963. Banks and insurance companies are expected to expand rapidly. "More and more mechanical equipment will undoubtedly be used to speed the process of keeping business records, particularly in large offices, and in some of these offices there may be substantial reductions in the number of clerical employees. For the economy as a whole, however, it is expected that the new positions created by growth will outnumber the clerical jobs eliminated by mechanization."

10. Ohio, State of. Ohio High School Standards for Business Education. Columbus, 1947, pages 83-8. SRV-SRSM

Appendix A gives a statistical analysis of business education in Ohio high schools and shows that 22 out of 1242 schools teach office machines.

11. Potter, Thelma M. An Analysis of the Work of General Clerical Employees, Contributions to Education, No. 903. Bureau of Publications, Teachers College, Columbia University. New York: 1944. JOB-STSM

This doctoral study includes data on the machine work of the clerical employees studied.

12. Stockman, Edgar R. An Integrated Office Practice Course of Study for Secondary Schools, NABTTI Bulletin, No. 50. 1950. CRS-STSM

This is a report of a doctoral study made of 427 beginning office workers and of the duties they have had to perform on their jobs.

13. Tonne, Herbert A. Principles of Business Education. New York: The Gregg Publishing Company, 1947. TRG-STSM

Chapter 16, "Training for Clerical Work," includes some general discussion of the machines program in high schools.

OFFICE MACHINES BIBLIOGRAPHY

Part B - Articles and Periodicals

Code

1. "A Banker Looks at Electronics," Business Week, March 30, 1957, page 105. TRD-JOB

   This business is experiencing a marked famine of clerks. Reasons: (1) Additional retail accounts which the bank is seeking, offering more and more services; (2) Present clerks become bored with monotonous tasks and move on to what looks like greener fields.

2. Aberle, John Wayne. "An Evaluation of a College's Curriculum in Business," Dissertation Abstracts, Vol. 15, Publication No. 11156, 1955, page 378. MST-BSch

   Points out in general the need for business-teacher cooperation.

3. "Adding Machines That Think," Business Education World, Vol. 33, June, 1953, pages 484-5. CALC-TRD

   This discusses the 18 new models introduced by National Cash Register, describing in detail some of the features on basic machines.

4. Agnew, Peter L. "The Determination of the Content of a Course in Office Practice," Unpublished Doctor's Dissertations, New York University, 1940. ANLS-STSM

   An analysis of two questionnaires sent to schools and businessmen over the United States (1) to find out what the schools were offering in Office Practice, and (2) what the businessmen thought the schools should offer.

5. "All Quiet on the Office Front," American City, Vol. 55, January, 1940, page 7. CALC-TRD

   Heralds the coming of the adding machines which "adds, subtracts, sub-totals in red, is quiet and new."

6. Anderson, Harry C. "The Advances in Office Equipment," The Office, Vol. 59, No. 1, January, 1964, pages 131, 291-4. EQT-FTR

   The statement is made that one of the industry's greatest growth potentials is marketing equipment to smaller companies.

7. Andrews, Margaret E. "Calculator Training in the Comprehensive High School," Balance Sheet, Vol. 33, May, 1952, pages 396-9. CALC-SEC

   This is an explanation of the plan to provide comptometer training for some of the students in this school, which makes it possible to continue a reasonable orientation for all students on basic office equipment, as well as to allow some students to specialize on the key-driven calculator.

8. "Are B-Schools on the Right Track?" Business Week, April 13, 1957, page 50. BSch-TRD

Two projects to reassess the significance of business schools to industry. (1) Ford Foundation will survey management to find out what schooling is needed for a business career. (2) Carnegie Corporation will evaluate the schools and--working with Ford--set up standards for them.

9. Baldwin, Woodrow M. "Introducing a Worker to a Machine," Office Executive, Vol. 29, August, 1954, page 22. TRG-JOB

A good management technique which could be applied in the classroom. Describes a secretary who has been used to a manual typewriter, but who was suddenly transferred to an electric one.

10. Barnhart, Wilbur S. "Office Machines and Business Education," National Business Education Quarterly, Vol. 6, 1938, pages 44-6. EQT-CON

Secondary schools have to reckon with a large number of business machines which adds greatly to the cost of business education; their care and housing add to the responsibility of teachers and supervisors.

11. Barnhart, Wilbur S. "A Practical Program for Teaching Office Machines," Business Education Digest, Vol. 6, No. 1, March, 1942, pages 55-7. NST-SEC

As the office manager thinks of the machine in terms of end results, so should educators have a similar body of principles to guide them in the problem of installing office machinery for instructional purposes. Lists five conditions under which machines instructional program becomes impractical.

12. Bates, Gertrude and Ferguson, Harold. "An Integrated Unit in Office Practice," Business Education World, Vol. 33, No. 7, March, 1953, pages 323-4. TRG-RCM

States the need for students from a small high school to be a "jack-of-all-trades" because of the possibility of small office jobs. This also tells about a project developed which was an integrated unit in handling a series of transactions that might occur in a small office.

13. Bauernfeind, H. B. "Office Machines--Some Comparisons of Various Methods of Teaching," American Business Education, Vol. 2, May, 1946, pages 228-32. CSM-STSM

A critical evaluation of the pros and cons of the various methods of teaching the office machines in the high school.

14. Baugham, Lloyd E. "Planning Your Office Machines Course," Business Education World, Vol. 33, January, 1953, pages 239-41. CRS-NST

A detailed discussion of the steps in determining the scope, content, objectives, and procedures for an office machines course.

15. Beaumont, John. "Improvement of Vocational Business Education," American Business Education, Vol. 2, 1945-46, page 260. SEC-RCM

According to the United States Office of Educational Vocational Leaflet, No. 12, 1943, page 35, "Less than 50 per cent who complete a commercial course in the public high schools of the United States are sufficiently trained to meet the minimum employment standards of business and government. In 13,000 high schools, 1,000,000 students were in typewriting, 750,000 in shorthand and bookkeeping.

16. Beckley, Donald K. "Meet Business Needs Through Cooperative Education," School Review, November, 1943, pages 539-43. DE-CWB

This is a good discussion of the ways in which a school can maintain its academic standards, help the student fit into the world of business, and give business an opportunity to use some of the potential which the school has to offer. Points out the need for flexibility, both by the school and by business.

17. Beckley, Donald K. "Training for Small Business Operation," Industrial Arts and Vocational Education, November, 1945. TRG-JOB

Suggests what institutes can do in the way of education to prevent so many small business failures. Most of our training is geared to the large businesses but students can be given training and knowledge which would assist small business to get a better start.

18. Berger, Cyril S. "Handling the Finished Product," Office Executive, Vol. 27, October, 1952, pages 31-2. EQT-JOB

Business mail has been called the life blood of commerce. It must be handled with speed, accuracy, and at a low cost. This article points up the fact that there are many labor-saving devices available to every business, no matter how small, to the advantage of modern mail-handling.

19. Blackledge, Walter. "Today--25 Million Office Jobs; Tomorrow--7 Million More!" Journal of Business Education, Vol. 39, December, 1963, pages 96-7. CRS-FTR

Secretary Wirtz has said, "It is so often overlooked that the machines not only reduce the number of unskilled jobs but also increase the number of skilled jobs." The training for many of these skilled jobs rests with the business teacher.

20. Blackstone, Bruce I. "Education for Office Occupations," School Life, Vol. 43, November, 1960, pages 18-20. RCM-FTR

Discusses 5-day meeting of 20 specialists called together by the Division of Vocational Education. Conference developed "Guides for Action." Major reason for meeting was to recommend to the Office of Education what it could do to promote office education. Teachers of education should have the broad background, including professional education, general education, occupational experience, and proficiency and knowledge of guidance techniques.

21. Blackstone, Bruce I. "The Expansion of Office Education," The Office, Vol. 59, No. 1, January, 1964, pages 122, 295-8. TRD-JOB

This article discusses the growing acknowledgment of the importance of education with an emphasis on office education; in the past, education was concentrated on how to produce things. Now it is recognized that both production and distribution rests on the functional records kept by an organization. The purpose of records is mainly to guide decisions. Details are given as to the rate of growth of office facilitated functions. The increased demand for more information from more sources about more items will support the office of the future. The Perkins' Bill (HR4955, Vocational Education Act of 1963) is evidence of the fact that the public recognizes that the office is the entrance to the "world of work" for many high school students. This article discusses the bill and its implications.

22. "Bookkeeping Machine Practice with a Purpose," Balance Sheet, Vol. 39, November, 1957, page 128. TRG-RCM

Each pupil was assigned several activity accounts of the high school; these were set up on ledger cards. Such a job gives them a sense of responsibility and personal accomplishment. Those teachers who do not have "real" accounts can find some in textbooks and practice sets to give the student the necessary training in the use of machines.

23. Brendel, Leroy. "Where + Who + What + How = Office Practice," NEA Journal, Vol. 8, February, 1954, pages 9-13. NST-RCM

All the above questions must be considered when considering the questions of "How to teach office machines." Since the employer is concerned with the volume of work put out each day, it is necessary to develop within the student the element of time and motion awareness to increase production.

24. Brendle, A. A. "Measuring Office Production," NOMA Forum, Vol. 16, February, 1941, pages 20-1.

A description of the methods and success attained by the Collins and Aikman Corporation in setting standards for office work.

25. "Bringing City Records to Life," American City, Vol. 54, October, 1939, pages 42-3. GVT-JOB

Describes machines being shown at the New York World's Fair--electrical accounting machines.

26. Brooks, Thomas R. "New Fit to the White Collar," Dun's Review, Vol. 82, Part 2, September, 1963, pages 98-100. FTR-JOB

("It is Changing Its Shape As Well As Its Face.") The white collar promises to become more and more tight as machines displace more and more people. Since World War II, the American economy has generated four white to one blue (an increase of 48 per cent since 1947),

29 million blue collar workers (a decrease of 9 per cent for the same period); changes are certain, though, in the white collar group itself. Many facets of EDP create new white collar jobs even as the computers take over the clerical jobs. From both of these changes have come a whole new set of problems for management and the office. Here is where the element of uncertainty comes in... Are the high schools to train students for jobs that will be eliminated in the future by changes in technology? The need for mobility and adaptability is great. For the white collar world itself, the key to the future might be quality rather than quantity.

27. Brown, Courtney C. "Knowledge of What?" Guest Editorial, Saturday Review, Vol. 42, January 17, 1959, pages 52, 79. CSM-CON

Acknowledges the fact that we are in a state of great change, but also states that there is a "ferment on the campus." Writer contends that there are obvious and certain disadvantages to excessive concentration on smaller segments of total knowledge. This is particularly true in education for business. "The opportunity may never again be so favorable to become familiar with and to think about the many features of business, their interrelationships, and their significance to the society in which we live; to develop that interest and curiosity about all phases of business that will make one a continuous student of business throughout a business career ...."

28. Bryan, R. D. "Clerical Training Values of Calculating and Adding Listing Machines," UBEA Forum, Vol. 2, January, 1948, pages 29-31, 47. SRV-STSM

The author is educational director of the Monroe Calculating Machine Company. In this article he surveys the usual plans for teaching machines in the schools with an evaluation of the various plans.

29. Bryan, R. D. "Training 1970's Office Staff Today," Journal of Business Education, Vol. 32, December, 1956, pages 119-20. TRG-FTR

Indicates need for proficient pencil-paper computation as well as dexterity on business machines. (This is in answer to an article by John A. Lurie, May, 1956, page 156.) "After all, business machines don't require electronic engineers or nuclear physicists to operate them; a normal proficiency with simple arithmetic is virtually the only prerequisite."

30. Buchen, Harvey A. "Office Machines Versus Office Practice," Balance Sheet, Vol. 31, February, 1950, pages 258-9. NST-TRG

This implies that most teachers are ill-equipped to teach office machines as a separate course, as the teacher is usually proficient in only the use of one or two. That is why office machines has been taught as a course related to office practice. "Good office machines teachers are few and far between." Since universities do not offer opportunities for teachers to master such skills, then the teacher has two alternatives: (1) the trial-and-error method, staying after school and trying to work out all the problems, and (2) at her own expense or with the compliments of the company, attend

the operator-training schools of the various companies that manufacture the machines. This concludes by the statement that office machines and office practice should be taught as separate courses--one complementing the other.

31. Buchen, Harvey A. "Office Machines Versus Office Practice," Balance Sheet, IQ-STSM Vol. 31, February, 1950, pages 258-9.

The author believes that the students of average or lower I. Q. are better adapted to become machine operators.

32. Bund, Henry. "Office Machines--Their Part in the Mobility Effort; Trends TRD-EQT and Developments in the Equipment Industry," Office Executive, Vol. 26, May, 1951, pages 14-7.

In approaching the problem of mechanization in the office, this survey was started by contacting all the major manufacturers of equipment and several of the smaller ones. Over 70 interviews were conducted with the manufacturers; also, cooperated with a number of companies which were known to be particularly efficient. Check claims and counterclaims, results of one source against another. Certain factors were found to be repeated again and again. These added up to general trends in new equipment design.

33. "Business Education for What?" University of Chicago Conference on Business SEC-CON Education, Chicago.

Proceedings of the University of Chicago Conference on Business Education, School of Business, University of Chicago, New York Gregg Publishing Company, 1940. Title: Business Education for What?

34. "Business Machines Are Only 60 Years Old," American City, Vol. 62, HST-EQT January, 1947, page 7.

Ten years ago (sic, 1937), The American City and Municipal Index counted the number of business machines in 384 municipalities, then used Milwaukee as an example. In 1937, Milwaukee owned 150 business machines as compared to 287 in 1946. War interrupted mechanization of accounting and office practices.

35. Callerman, C. C. "Instruction on the Operation of the Multigraph," NST-TRG Journal of Business Education, Vol. 15, No. 6, February, 1940, page 25.

This gives step-by-step details in instruction on the multigraph.

36. Carmichacl, Vernal H. "Need for Research in the Field of Office Machines RES-SEC and Clerical Practice," NBEQ, Vol. 14, December, 1945, pages 49-54.

Major objectives:
(1) To acquaint the students with the machines which are found in modern offices;
(2) To acquaint the students with the firms' procedures and practices that are used in modern offices in connection with the use of machines;
(3) To furnish the students with the opportunities to acquire skills in the operation of office machines.

37. Casad, Kathleen H. "A Design for a Business Machines in Ohio--How to Achieve Maximum Results with a Minimum Waste of Classroom Time," Journal of Business Education, Vol. 39, December, 1963, pages 98-100. TRG-SEC

Stresses necessity of having materials--signs, manuals, etc.--ready before school term starts. Author developed an instructional manual geared specifically to each machine.

38. Chambers, Ima; Cross, Lois; Howe, Karl. "Plans for the Office Machines, Office Practice Room at Central Michigan University," Journal of Business Education, Vol. 37, February, 1962, pages 182-3. EQT-FTR

Gives in detail the physical layout of plans and reasons why it was done this way. Anticipations of future uses are given.

39. Chapman, Florence. "A Study of Office Practices and Machines Used in Business Offices of Quincy, Illinois," Unpublished Master's Thesis, University of Iowa, 1942. SRV-STSM

A survey of 115 offices in Quincy, Illinois, and their employees involved in various kinds of office work.

40. Clark, Ray A. "Office Machines, Selection Principles," Office Executive, Vol. 30, June, 1955, pages 17-8. EQT-JOB

It's very easy to build up a strong case for replacing an old office machine; therefore, we must set up a system for comparing the assets of old and new equipment before we move to make replacements. Machine selection presents two major questions: Why is a machine needed? and, if needed, what particular machine should be selected?

41. "College Attuned to Business: Northwood Institute, Midland, Michigan," Business Week, September 7, 1963, pages 143-4. BSch-CWB

Prides itself in the fact that it is supported by business. Caption on picture: "How to operate adding machines. The school prides itself on its practical application to business." It uses businessmen as counselors and advisors.

42. Conkling, Clarence M. "Put That Machine to Work," Balance Sheet, Vol. 32, May, 1951, pages 394-6. SEC-RCM

This writer describes the use of a few machines in a small school, telling how three business machines handle a potential of 55 students each year. Use hand-operated machines because, he feels that basics can be mastered without much trouble: one full-keyboard, one ten-key, and one calculator.

43. Cook, Fred S. "Could This Happen to One of Your Shorthand Students?" UBEA Forum, October, 1954, pages 20-2.

Recommendations are made for the type of equipment that might be used in office practice classes. Attention is given also to sequence and scheduling and practice on several pieces of equipment.

4. Cook, Fred S. "A General Clerical Course for Seniors," Business Education Forum, February, 1962, pages 7-9.

   How much practice on machines do clerical workers need? This and related topics are the focus of the proposed course.

5. Craf, John R. "Preparing Young People for Business," Journal of Business Education, Vol. 5, No. 8, April, 1940, pages 11-2, 14. CON-SEC

   This states the need for education to be more comprehensive than before. Points out the need or value of part-time experience, the necessity for understanding business and his relationship to it. English is fundamental and ecomonics should be studied.

6. Crawley, Kermit. "Vocational Requirements for Beginning Office Jobs," Industrial Arts and Vocational Education, Vol. 40, January, 1951, page 27. ANLS-JOB

   Following are some significant data which grew out of a NOMA survey as conducted by the committee of which the author was a member: (1) As the size of the office increases, proficiency requirements for beginning jobs becomes lower. (2) Over half the companies do not have a program of in-service training. (3) Over half of the companies do not give functional tests to applicants. (4) Ninety per cent say thay have job specifications for beginning stenographers. (5) About half the companies require a physical examination. (6) Eight mental traits listed as being most important were: spelling, grammar, and accuracy; then, general knowledge, adaptability, independence, and memory.

7. Cross, Henry A. "They Need More Than Skills," Business Education World," Vol. 21, September, 1940, pages 31-3. MST-JOB

   Suggests use of self-test called "Self-Discovery" (Otis Test can be used) to give self-confidence. In this test for office workers is remedial reading, social arts, general psychology, or some of the varied types of work to enrich the student's total equipment so that they will be personable as well as skillful in business.

8. Crownover, Hugh L., Jr. "A Survey to Determine the Needs for Courses in Office Machines in the Public High Schools of Knoxville," Unpublished Master's Thesis, University of Tennessee, 1941. SRV-STSM

   This questionnaire study received replies from 300 businesses in Knoxville, Tennessee, giving data concerning the equipment used in the offices, the numbers of full-time, part-time, male, female, trained, and untrained workers, and the requirements for employment.

9. Currigan, Thomas. "Office Mechanization Experience," American City, Vol. 74, June, 1959, page 139. EDP-GVT

   One of the big questions coming up when deciding to purchase new equipment is: Who is going to operate the equipment? Does it take and experienced person, or can I use my present staff after they have been trained?

50. Daniels, E. M. "Calculator Training for Varied Ability Students," American Business Education, Vol. 2, May, 1946, pages 245-7. IQ-STSM

An Officer of the Burroughs Machine Company gives valuable suggestions for schools as to who should take the machines course, standards to attain, and plans for training.

51. Daniels, George S. "High School Calculating Machines Course," Journal of Business Education, Vol. 17, No. 8, April, 1942, pages 17-9. CALC-SEC

A discussion of one teacher's idea of what an office machines course should be.

52. Dobie, R. Magruder. "How to Educate a Secretary," Saturday Evening Post, Vol. 221, February 12, 1949, pages 30-1, 116. BSch-TRG

Katharine Gibbs School in New York teaches girls how to dress, groom, make up, type, take notes--even to spell. Believes that relations must be maintained with the business world. During a year at this school, each girl is required to write a letter to a bona fide employer asking for permission to come around and discuss his secretarial problems. This gives the potential secretary a chance to see the inside of an actual business office, thus giving her a better insight into the reality of what the future might hold.

53. Dotson, Verner. "Procuring Funds for Office Machines," National Business Education Quarterly, Vol. 16, May, 1948, pages 43-8. EQT-RCM

The final considerations after many others have been satisfied: (1) Inform school administrators. (2) Determine the school's responsibility. Sometimes when schools lack revenue, businessmen are ready to lend their assistance. The Seattle school situation was difficult. Most typewriters and other office machines were old or worn out. Machines were needed for experience as well as for replacement. The value of the business leaders working with office managers was known when the Seattle School Board authorized more than 100 thousand dollars for new equipment.

54. Fairbrother, Roy. "Education for Business--What the Inventory Shows," Education, Vol. 66, December, 1945, pages 233-7. ANAL-SEC

An article written for the post-war training of demobilized men and women. Discusses selection and guidance of the teaching methods and techniques.

55. Falkner. Robert E. "Machines, the Orphan Subject," The Balance Sheet, Vol. 33, December, 1951, pages 160-1, 163. CALC-TRG

The writer gives his idea of how full-key and ten-key machines should be taught. He recommends use of used machines, hinting that teachers usually look for the "newest, most expensive machines."

56. Fasnacht, Harold. "Background Preparation for Office Machines Training," Business Education World, Vol. 23, March, 1943, pages 413-5. TRG-SEC

Clearly states that specific training is necessary for calculators, posting machines, duplicating machines, transcription machines. The main purpose is to achieve a high degree of efficiency with the least amount of wasted time and effort on the part of the learner and the teacher. "....Independent judgment and general aptitude ought to be prerequisite; but most instructors are not in a position to require this."

57. Fasnacht, Harold D. "Equipment and Supplies for the Office Appliance Laboratory," UBEA Forum, Vol. 3, April, 1949, pages 14-5. EQT-SEC

Problems to be considered in setting up an office machines program: (1) Selection and installation. (2) Operation and maintenance. Suggestions to be kept in mind in the selection of equipment: (1) As much variety as possible should be made available to the students. (2) Those makes of equipment should be selected on which service is readily available. (3) Machines and equipment which are similar to those used in the community and nearby offices where students are likely to work to be installed. (4) The budget of the school must of necessity be a governing factor. (5) Where a limited budget is of concern, care should be taken to see that the most instruction time is given to the most used equipment.

58. Ford, Gertrude C. "Keeping Office Machines Instruction in Line with Psychological and Scientific Findings," NBEQ, Vol. 9, March, 1942, pages 9-12, 45-7. RES-TRG

States that educational writing in the fields of typewriting and business machines has often been on objectives, organization, and equipment, rather than on psychological and scientific findings related to skill learning, production standards, and evaluation of progress.

59. Forney, M. L. "Office Machines in Use and Types of Training Received by Machine Operators in Lincoln, Nebraska, with Implications for Teacher Training," M. Ed. Thesis, University of Nebraska, 1958, 125 pages. TRG-INST

Of 391 responses about the preparation of office machine operators, 47.6 percent indicated that this was done by the employing firm. The typewriter was the machine used most frequently. The number of manuals equalled 36.8 per cent of the total of all machines reported; the electric reported 11 per cent of the total of all machines.

60. Fox, Frederick G. "Performance Standards in Office Operations," NBEQ, Vol. 9, Spring, 1941, pages 15-6, 33. MST-STSM

The article lists standards for production on the adding machines and calculators as obtained from several authoritative sources.

61. Franques, Marie Louise. "Some Problems and Trends in the Teaching of Office Machines and Appliances," UBEA Forum, Vol. 9, March, 1955, pages 27-8. NST-TRD

Surveys provide means by which the school is able to obtain

information about the potential job market and business entrance requirements in the community. States that the "acquaintanceship level is sufficient."

62. Freeman, Max Herbert. Business Education World, New York, New York, 1943, 55 pages. RES-HST

Bibliography of research studies in Business Education, 1920-1940; a cumulative author, subject, and institution index of research studies in business education listed in the United States Office of Education.

63. Gabler, J. Kenneth. "Teaching Office Machines," Journal of Business Education, Vol. 18, No. 4, December, 1942, pages 19-20. NST-TRG

The purpose of using the suggested system is to show how the individual teacher can minimize the amount of time expended with each pupil.

64. Garwood, Samuel. "Layout and Equipment," NOMA Forum, Vol. 24, January, 1949, pages 19-28. EQT-STSM

An official of the Bell Telephone Company discusses the factors in selection of machines and the necessity of training for the operators.

65. Gehres, Maxine. "Machine Calculation," Ohio Business Teacher, Vol. 9, October, 1949, pages 23-5, 28. TRG-STSM

The author describes the plan of machine instruction used at John Hay High School, Cleveland, Ohio, and stresses the need for arithmetic instruction in connection with machine training.

66. Gibson, Dana and Straub, Luralyn. "What a High School Business Graduate Should Know About Business Machines," Business Education World, Vol. 32, No. 7, March, 1952, pages 325-6. TRG-NST

These authors say that it is time to review machines courses because the recent wars have created such a labor shortage that mechanization is being sped up or forced. The machines that a school should have are spared between the single school and the multiple school. They justify machines by placing them under "basic" and "desirable additions": typewriting, duplicating, dictating, figuring and bookkeeping machines; instructional and adjusting machines are named as being necessary in the office machines room.

67. Gibson, Dana and Straub, Luralyn. "What a High School Student Should Know About Duplicating Machines," Business Education World, Vol. 32, No. 7, April, 1952, page 389. TRG-NST

This deals in particular with the skills and knowledge required by the student studying duplicating machines. It mentions that this skill can be acquired quickly.

68. Gibson, E. Dana. "It's Time to Teach Business Electronics--And We Are Doing It At San Diego State," Business Education World, Vol. 36, June, 1956, page 28. EDP-TRD

Suggests that teachers read all they can find about the subject and bring in speakers to present specific up-to-the-minute information. Adaption will be the best plan for years to come. Business teachers must learn how IDP is going to affect his subject and his methods.

69. Gibson, E. Dana. "Office Automation: How It Will Affect Business Education in the Future," Balance Sheet, Vol. 39, November, 1957, pages 100-5. EDP-SEC

This is a very thorough discussion of the meaning of this new technology, the various terms and their implications, and how they will affect the different office positions. Secretaries will be least affected, stenographers may have to change, typists will be upgraded, and many other similarly ordinary things will change in the office.

70. Giordano, Albert G. "Office Practice Area Report," American Business Education, Vol. 15, October, 1958, pages 173-4. EDP-TRD

Automation will create new demands for more skillful typists and machine operators. These machines will require even higher skill on ten-key touch operation, as well as on calculator machine operation.

71. Goldsmith, Samuel. "The Formulation of an Office Machines Course in the Secondary Schools," Journal of Business Education, Vol. 5, No. 8, April, 1940, pages 19-20. CRS-SEC

This writer approaches the problem from the angle that "business must be satisfied." He states that the dearth of tests makes testing difficult, but one's ingenuity should solve this problem.

72. Gottsdanker, Robert M. "Measures of Potentiality for Machine Calculation," Journal of Applied Psychology, Vol. 27, June, 1943, pages 233-48. IQ-STSM

This study sought to establish a test battery for the selection of machine operators but concluded that the tests used did not provide sufficiently high correlation.

73. Gratz, Jerre Eugene. "Identification and Analysis of the Major Issues in Selected Business Education Subjects of the Public Secondary Schools," Dissertation Abstracts, Vol. 22, No. 6-7, 1961-2, pages 2300-1. ANAL-SEC

The purpose of this study: (1) To decide the major issues in selected business education subjects, and (2) To determine the opinion of current business leaders in business education with respectability to these issues, (3) To determine the extent to which these issues are controversial, and (4) To determine the trends of thought in these selected business areas.

74. Green, Vera. "NOMA's Suggested Standards for Beginning Office Jobs," Education, Vol. 72, October, 1951, pages 101-6. STD-JOB

Statistics reveal that on over-all jobs, employees are functioning at about 25 to 30 per cent capacity. This means that every office has two to four times as many workers as it should and is expending four payroll dollars for every dollar of work performed.

75. Groark, James F. "Incubating Office Workers," Chicago School Journal, Vol. 30, No. 2, March-April, 1949, pages 202-5. CWB-JOB

This is a well-written article about the experiences of the new office worker in her beginning job. It stresses the necessity of the school helping the new worker overcome these difficulties while she is yet in school by cooperating with the office, and by the teacher working closely with the office staff to see that this is a learning process rather than just a means of getting some work done.

76. Gruber, Charlotte. "Office Machines--Vital Phase in Clerical Training," UBEA Forum, Vol. 11, February, 1957, pages 12-4. TRG-SEC

"Vitaminizes" or lists the machines in order of importance, as vitamins are important in ABC order; i.e., Vitamin A represented the adding-listing machine; Vitamin T, at the other extreme, represented the transcriber. This article is actually a selling piece for the teaching of office machines, discussing each machine and its importance to the whole program.

77. Gustafson, Carolyn and Phil. "Secretaries Wanted--Desperately," Saturday Evening Post, Vol. 224, October 6, 1951, pages 40, 71-2. GVT-CON

This article is about the woman-power shortage in Washington, D. C. Untrained secretaries are being offered 42 dollars per week, 60 dollars per week, etc. This dire need brought forth the statement that they might try to eliminate the use of stenographers just for typing reports and answering phones; it went so far as to prognosticate (after describing the popularity of dictaphones by many businessmen) "the necessary step may be a machine which will take the spoken word and put it right down on paper without benefit of the feminine hand."

78. Guthrie, Mearl Raymond, Jr. "The Measurement of Personal Factors Related to Success of Office Workers," Dissertation Abstracts, Vol. 13, Publication No. 6383, 1953. MST-JOB

A study for the purpose of investigating the feasibility of developing a technique which would aid in the differentiation of those employees who have developed desirable personal traits for office work from those who do not possess such traits.

79. Hanebrink, Lawrence. "Employment of Office Machine Operators," Journal of Business Education, Vol. 16, January, 1941, pages 23-4.

A report of a survey of twenty business firms in St. Louis, showing the numbers of operators and the attitudes of the employers toward high school training for these office jobs.

80. Harry, Nell. "A Business Machines Course," Balance Sheet, Vol. 45, No. 1, September, 1963, pages 17-9. CSM-SEC

This writer describes the business machines course at this particular high school, enumerating the objectives, the course plan, the machines taught, the equipment, the classroom organization, the grading, student responsibility, and job placement.

81. Hartsel, Gladys S. "Teaching Business Machines," Business Education World, Vol. 26, January, 1946, pages 241-2. TRG-SEC

States that it is necessary to have a thorough knowledge of business arithmetic if one is to learn the calculator. Maintains that this machine cannot be learned in "one or two easy lessons; he is acquiring a business tool; therefore, his aim should be extreme accuracy. It is necessary that the teacher have some skill if she is to teach it."

82. Hittler, George M. "Problems and Issues with Reference to Teaching Procedures in Business Machines," National Business Teachers Association Yearbook, 1941, pages 296-304. CON-STSM

The author gives a summary of current thought on machine training covering such topics as basic philosophy, amount of training, class organization, plans of instruction, production standards, grade placement, and pupil selection.

83. Hittler, George M. "Teacher Training in the Field of Business Machines," NBEQ, Vol. 14, December, 1945, pages 45-8, 60. NST-TRG

Should office machines teachers be skilled operators? Some concepts of office management need to be taught because the teacher is like an office manager when he chooses equipment. The basic principle here is that the machine is only a tool for solving a problem. This problem must be analyzed before the machine is purchased, and lab tests must be given before the right machines is selected. The teacher must also know about time and motion studies. This writer states that the teacher gives attention to the "how" and overlooks the "whens, wheres, whos, and whats," leaving the job partially done, because effort in this area is yet unorganized and unsystematized.

84. Hittler, George M. "Training Office Machine Operators," Journal of Business Education, Vol. 20, June, 1945, pages 15-6. TRG-SEC

Fundamental facts and assumptions: (1) Office machines training attempts to give some members of that group of those with twelve or less years of education a marketable skill. (2) Those migrating to the urban areas cannot expect to get the needed training in the original high school. (3) Business education can help cut cost of production by providing well-trained workers. (4) Office machines training on the pre-employment level may be general in nature--to encourage adaptability of some types of machines to some office problems. (5) Operator must find relationship between training received and job opportunity. (6) Some workers can be best taught on apprenticeship basis. (7) Laws of learning--whole versus part--

should be thoroughly known by the teacher. (8) Learner must participate in the demonstration, as demonstration techniques are very often of most value in developing machine skill. (9) Different types of machine courses may be offered on different grade levels. (10) An adequately equipped laboratory is necessary in order that the student can integrate its operation into total mastery of the total machine skill. (11) Teacher should encourage good posture, hand position, correct stroking habits, etc. (12) Arrangement of machine, materials, etc., is important.

85. "How to Get Rid of Some of the Office Paper Work," Personnel, Vol. 40, No. 5, September, October, 1963, pages 55-61. RCM-JOB

This is a very good article, giving some ways in which one executive eliminated much of the unnecessary paper work that his secretary had been doing for him. Instead of "automating" the office, he expedited it. He worked out a kind of "flood control" which reduced costs, shortened recruiting time, attracted applicants with positive attitudes, and brought order out of chaos.

86. Howard, Harold and others. "Improving Learning and Achievement in Business Office Machines," The American Business Education Yearbook, Vol. 2, 1945, pages 240-60. TRG-STSM

This section of the yearbook deals with the problem of machine training and discusses plans of organization, levels of achievement, equipment, pre-requisites, teaching methods, standards, and related topics.

87. Hughes, Arthur E. and Reineke, William H. "A Set of Standards in Teaching Office Machines," Balance Sheet, Vol. 38, December, 1956, pages 166-7. MST-SEC

These writers maintain that the teacher should have a set of standards for each machine in order to produce effecient operators. A table shows what proficiencies should be expected on certain machines and where work still needs to be done.

88. Hunt, Raymond. "Administration of Office Equipment," NOMA Forum, Vol. 24, February, 1949, pages 19-27. EQT-STSM

An analysis of the method used by the Prudential Insurance Company to maintain control of their office machines, and some things they have learned about training operators.

89. Hunt, Raymond. "Selection of Office Machines," Journal of Business Education, Vol. 25, September, 1949, page 39. EQT-SEC

Selection should be governed by: "A knowledge of what machines are available and what types of operation they can perform, as well as a real understanding of the job in question. Suggests a check list be used against each machine in relation to the job it can perform.

90. Hunter, Roy O. "Does Your School Offer Courses in Office Machines?" UBEA Forum, Vol. 7, April, 1953, page 35. CRS-SEC

Discussion of the general plan and the proficiency plan for teaching office machines. Cost of machine makes full acquaintanceship prohibitive; although the teacher of office machines does have the cooperation of machine companies, sales companies cannot be expected to formulate the policies of the course. Advises purchasing one machine in each group of the several major ones.

91. Huskey, H. D. and Huskey, V. R. "New Frontiers in Business Management Control Are Being Established by Electronic Computers," Journal of Accountancy, Vol. 93, January, 1952, pages 69-75. EDP-TRD

This article sketches briefly the historical development of computers and forecasts the uses which will be made of them.

92. Hutchinson, A. R. "How to Determine Office Equipment Requirements," AMA Office Management Series, No. 120, 1948, pages 26-32. EQT-STSM

A description of the method used by the Western Electric Company to determine what types of machines to buy for use in its offices.

93. Indiana University, Bureau of Business Research. Indiana business information Bulletin #9, 1960, 80 pages, illus. RES

Proceedings of the 1960 DBA Conference on Education for Business. Bloomington Bureau of Business Research, School of Business, Indiana University.

94. Jarrett, Jack L. "A Surevy of Office Machines Equipment in a Selected Group of Business Firms in the Pittsburg, Kansas, Area," Master's Thesis, Kansas State College of Pittsburg, 1958, 66 pages. SRV-JOB

Study of business firms to determine types of office machines that might be incorporated into a secondary school course. Personal interviews and check list for 40 business firms employing two or more employees. Summary: (a) Typewriter was most used office machine. (b) Others in order of importance: adding-listing, calculators, bookkeeping and billing machines, duplicators, and voice-writing equipment. (c) Machines employers thought that high school graduates should be familiar with, in order of importance: ten-key adding-listing machine, crank-driven calculator, stencil-duplicators, dictating machines, bookkeeping machines, full-key adding-listing machines, and key-driven calculators. (d) Most employees secured by personal contact.

95. Jenal, Robert L. "Punched Cards Present a Problem," Business Education Forum, Vol. 6, No. 3, December, 1951, page 22. EDP-SEC

"The understanding of the collator is as basic to an accountant as an elementary accounting rule." Except in rare cases, most operations now being converted to cards could have been handled at a saving with equipment that existed 15 years ago.

96. Jernberg, George. "Business-Machines Training in a Minnesota High School," American Business Education, Vol. 17, No. 5, May, 1961, page 263. SEC-TRG

This writing focuses on the instruction in the office machines class in IBM card punch training.

97. Jewett, Grandjean G. "A Survey of Available Electronic Computers and What They Can Do for Modern Business," Journal of Accountancy, Vol. 96, August, 1953, pages 182-9. EDP-SRV

This author claims "the needle of truth is being lost in a haystack of promotion releases." This gives the results of a survey, naming the machines which are actually available, who is building them, what they can do, and how their installation can affect the office methods and personnel of the companies that invest in them.

98. "Jobs on Electronic Office Machines," Changing Times, Vol. 11, September, 1957, pages 31-3. EDP-JOB

"Automation is coming to many businesses." This gives a table of the jobs being created by automation, what some of the words mean, the talent one needs to succeed in this field. "The key to this advancement will not be in your schooling--that is only the background, but the experience you manage to gain inside a company."

99. Johnson, B. Thorvald. "Devising Instruction Sheets for the Hand-Operated Crank-Driven, Non-Listing Adding Calculator," Unpublished Master's Thesis, University of Southern California, 1942. CALC-STSM

The author outlines a method of developing instruction sheets for teaching the calculator, and offers suggestions for their use in a teaching situation.

100. Kahn, Gilbert. "The Operation of Instruction Materials for a Secondary Course in Stenographic Machine Shorthand," Dissertation Abstracts, Vol. 15, Publication No. 12221, 1955. CRS-SEC

Discusses what materials would be needed and the procedure for teaching. Need for this in business not established more than to say evidence of need was noted in UN reports and Kefauver Committee on TV.

101. Kappel, David J. "Summary of Civil Service Opportunities for the Operators of Office Machines," Business Education World, Vol. 31, April, 1951, pages 393, 396. GVT-TRG

Public high schools having a large enrollement of commercial students should offer satisfactory office machines training programs to meet the local needs.

102. Kennedy, Calvin. "Some Definite Teaching Procedures for Business Machines," Balance Sheet, Vol. 38, January, 1957, pages 210-1. NST-SEC

Recommendations: (1) Make a good impression the first day. (2) Teach arithmetic and plenty of it. (3) Make daily assignments whenever possible. (4) Review often. (5) Test often. (6) Read professional publications.

103. Kennedy, Calvin. "Using the Guest Speaker in Teaching Office Machines," UBEA Forum, Vol. 10, May, 1956, page 28. EXP-TRG

Suggest very careful preparation beforehand, which includes reading the article by James F. Giffin, "The Guest Speaker," (UBEA Forum, January, 1956).

104. Kerman, A. J. "Punched Card Training Needed," Journal of Business Education, Vol. 32, January, 1957, page 198. EDP-TRG

States that company classes should provide knowledge and content. Says that this is the way for an accountant to become a specialist.

105. Kirksey, C. Darwin. "Which Office Machines Shall We Teach?" Collegiate News and Views, Vol. 8, March, 1955, pages 13-6. NST-EQT

This is a discussion of a survey taken relating how it helped in planning this particular office machines program. A two-page questionnaire was used, 29 offices were visited; ie., questions regarding type, age, number of machines, the per cent of time the machines were in use during the working day.

106. Klein, Herbert E. "More Value for the Office Dollar," Dun's Review, Vol. 82, Part 2, September, 1963, pages 116-8. EDP-JOB

Office equipment has been one of the major growth industries. Sales have increased sevenfold since World Was II. Increase has now reached an estimated 315 billion dollars yearly. Typewriters alone are a 350 million dollar business, and office copiers 300 million dollars--double the sales of just three years ago.

107. Krause, Ruthetta. "Business Machines Must Be Included in Our Business Training Program," Business Education World, Vol. 31, September, 1950, pages 36-8. CON-TRG

"The only sensible, long-range program is one that provides a comprehensive business-machines course." In a recent survey, it was found that the use of the adding machine was fourth among all office duties in all job classifications. It was exceeded only by the use of the telephone, use of filing systems, and examining and/or sorting business papers. Even greater use was made of this than of the typewriter.

108. Kroepsch, Helen J. " Office Machines Training Is Important," UBEA Forum, Vol. 3, February, 1949, page 31. TRG-SEC

Simple filing knowledge and business arithmetic constitute the basis of many clerical jobs in this new age of mechanized office procedures.

109. Kuethe, Verna. "Business Students See Business in Action," Balance Sheet, Vol. 45, No. 1, September, 1963, pages 7, 48. CWB-SEC

This is a discussion of how the writer planned to have her students visit local offices in an attempt to coordinate education and the activities of local businesses. During the summer she took a survey of offices to determine the sizes and the kinds of jobs available.

110. Lichtenheld, F. M. "Why Give Office Machine Instruction?" Journal of Business Education, Vol. 15, No. 5, January, 1940, pages 15-6. ANAL-NST

Generalizes on the physical aspects of the course--how to make such a course fit the community needs.

111. Liguiori, Frank Edward. "Problems of Beginning Office Workers," Dissertation Abstracts, Vol. 16, Publication No. 15, 114, 1956, page 47. ANAL-JOB

The purpose of this study was to determine the problems of beginning women-office workers in obtaining and holding jobs as experienced by the workers and as seen by the employers. Interviewed 120 workers and 22 employers; workers were graduates of high schools and had more than four months of work experience. Employees and employers were in general agreement in regard to their problems--generally these problems were attributed to unsatisfactory instruction or inadequate counseling in high school. These difficulties were related to skills as well as personal qualities. It is evident that cooperation by the business and school must be developed to a greater degree. Need for realistic instruction and practice in job-getting and job-holding. "High schools should consider modification of course offerings and course content on the basis of follow-up studies."

112. McBride, William J. "Survey of Office Machines in the Beloit, Wisconsin, South Beloit, Illinois, Area," Master's Thesis, University of Wisconsin (Madison), 1956, 68 pages, National Business Education Quarterly, Vol. 27, October, 1958. SRV-JOB

Purposes: (a) To ascertain what type and number of business machines are used in the Beloit, Wisconsin, South Beloit, Illinois, area. (b) To attempt to discover the number of personnel employed in a full-time and part-time capacity in the same geographic area. Methods and sources: A questionnaire containing a list of the various office machines used generally and a two-part question inquiring what percentage of dictating was transcribed from shorthand notes and transcribing machines was sent to each business. The return of the questionnaires was 61.6 per cent.

113. McCarren, Kenneth J. "How Much is a Million Dollars?" American City, Vol. 54, April, 1939, page 71. CON-EQT

It is what Detroit taxpayers saved in nine years by mechanical procedures in the office of the Board of Assessors. In 1930, $170,000 was spent for the mechanization; tax thus saved was $1 million dollars.

114. McNall, Nyla. "Office Machines as Taught in the Colorado Springs High School," Balance Sheet, Vol. 36, January, 1955, pages 205-7. SEC-IQ

A new area developed when it was observed that this high school had nothing in the business education courses to offer to the slow learner. Three requirements that a student must meet to take the office machines course: (1) Each student must be a senior with

an average of "C" or better in the first and second semesters of typing. (2) The student must be taking a general business course--in secretarial or retailing majors. (3) The student must have successfully completed a prerequisite course in office practice. Here they study 18 different departments of business and clerical procedures, one for each week of school; they also study filing rules in this course. List of machines used, objectives of the course, jobs to be completed by the students, description of the machines are given in this article.

115. McVey, Jennie. "Office Machines to Fit the Job," Business Education Forum, Vol. 8, December, 1953, pages 31-5. EQT-SEC

Discusses office machines courses at Swampscott High School in Swampscott, Massachusetts. Cooperates with businesses in the area by giving tests in the senior year, making out applications; also various standardized tests are given to acquaint the students with what they are to expect when applying for a job.

116. "Machine Accounting in the Municipal World of Today," American City, Vol. 54, October, 1939, page 43. EQT-GVT

Praises Burroughs for fitting bookkeeping machines to the kind of office work that is common to all municipalities.

117. "Making Office People More Productive," Office Productivity Pamphlet, (Reprinted from Dun's Review, September, 1960), pages 11-6. SRV-TRG

Survey was made of office operations in 275 companies; now these companies are putting greater stress on work measurement techniques, job descriptions, use of clerical procedure manuals, and tighter scheduling of work. This article details specific companies and the methods they are using to expedite the handling of paper. Throughout most of these examples, it is noted that a program has been inaugurated for boosting clerical productivity in that particular company.

118. Meehan, James R. "Achievements in the Office Practice Subjects," Commercial Educational Association of the City of New York Yearbook, 1938-9, pages 35-41. CALC-STSM

The section of this article dealing with machines makes definite suggestions as to the type of practice material that should be included in the course for the calculating machines.

119. Meehan, James R. "Office Machine Training--the Time Required for an Adequate Program," UBEA Forum, April, 1947, pages 17-8. TRG-STSM

The author believes the training time on machines can be cut down by stressing only the operations best suited to the machines. He outlines a training program for the operators of the various calculating machines.

120. Mell, Harry. "A Business Machines Course," Balance Sheet, Vol. 45, September, 1963, pages 17-9. CRS-SEC

Objectives of course: (1) Good work habits. (2) A working knowledge of clerical functions. (3) Additional knowledge. (4) Acceptable working knowledge of six other machines. (5) Understanding of the uses of the decimal point. Course plan is represented, as well as a list of machines taught, classroom equipment, classroom organization, grading student's reports, and job placement.

121. Melson, Elizabeth R. "Devices for Increasing Efficiency in Teaching Office Equipment," Journal of Business Education, Vol. 37, October, 1961, pages 10-2. TRG-SEC

Goal for student achievement in knowledge of processes on an acquaintanceship level--and more. He should have the broad experience to know how to check out the potentialities of the machine.

122. Morrell, Donald C. "Los Angeles Standards Survey," Journal of Business Education, Vol. 25, February, 1950, pages 25-7. SRV-JOB

Recommendations were developed from this survey, among which was the desire to follow up the results of the purchase and installation of office machines to determine whether or not at that time businessmen were more willing to help high school graduates or not.

123. Morrison, Rose. "What Price Progress?" UBEA Forum, Vol. 10, February, 1956, pages 13-4. HST-RCM

"Electronics in business means accepting the fact that better office productivity will often require replacing a machine, not because it can no longer do its job, but because a new machine can do the job better."

124. Morrow, Joseph H. "A Businessman Looks at Business Education in the High Schools," Balance Sheet, Vol. 45, No. 3, November, 1963, pages 105-8, 138. JOB-SEC

"In 1956, almost 76 per cent of Equitable's Home Office employees were in the four lowest salary grades--the clerical jobs. By the end of 1962, there had been more than a 12 per cent shrinkage in the ratio of employees in the next six salary grades--the specialist, technician, and supervisory jobs." Dr. Morrow suggests that if present trends continue, training in specific business skills may eventually become the smaller part of the curriculum.

125. Morse, Olga Scott. "Adapting the Office Machine Course to the Community," Journal of Business Education, Vol. 17, No. 2, October, 1941, pages 19-20. SEC-RCM

This writer mentions pitfalls and warnings about accepting work from outside the class in order to give experience on office machines. Details were given as to the make up of small bulletins and yearbooks, programs, cards, and color work.

126. "Municipal Significance of Dictating Machines," American City, Vol. 54, March, 1939, page 7. CON-EQT

Tells of the advantage of using the dictating machines at the Board of Estimate in the City of New York, detailing the length of the time of dictation, the amount of notes, the prolonged meetings, etc. The world's largest user of dictating equipment is New York City. Dictating machines and booths do not even go to lunch.

127. Mussleman, Vernon A. "An Administrator Evaluates the Machines Courses," American Business Education, Vol. 4, 1947-8, pages 296-7. SEC-RCM

Sub-headings: (1) Targets. (2) Tools. (3) Application. (1) Suggests acquaintance with several machines. (2) How many, what kind, cost and for what used. (3) Best with work experience.

128. Nash, Elizabeth A. "The Textbook's Place in Machine Office Practice," Business Education World, Vol. 19, October, 1938, pages 138-40. CON-STSM

The point is stressed in this article that over-all understanding of the business and the particular functions of the material with which the operator works must be added to mere skill in manipulating a machine.

129. Neill, Jack Ramsey. "A Critical Study of Business Education in the Public Secondary Schools of Ohio," Dissertation Abstracts, Vol. 16, Publication No. 16,617, 1956, page 1408. CSM-SEC

Point No. 12 in recommendations: School officials with the help of local business associations should make available adequate classroom furniture and the types of office machines needed to train business students for initial employment in office and distributive occupations common to the employment area served by the school.

130. Nicholas, J. Cornelia. "The Development of a Self-Instructing Manual for the Burroughs Sensimatic F-100," Dissertation Abstracts, Vol. 18, Publication No. 24,186, New York University, 1958. TRG-CRS

Operators' manuals of five business machines analyzed to determine how to train operators.

131. Nichols, Frederick G. "Criticism, Comment, and Challenge," Journal of Business Education, Vol. 18, No. 5, January, 1943, page 9. CSM-TRG

Although the writer criticizes the fact that many things were not taken into consideration which should have been, he says that in a survey, many things must be taken into account to make it purposeful. He questions the wisdom of the issue of training a student for the jobs which are available, even though that student may have an aptitude for a job for which there seems to be no demand.

132. Nichols, Frederick G. "Criticism, Comment, Challenge," Journal of Business Education, Vol. 18, January, 1943, pages 9, 25. CSM-STSM

The author takes issue with the usual suggestion that the work of the local community should determine the content of the machines course.

133. NOMA, Fort Worth Chapter. "Machine Training Recommended," NOMA Forum, Vol. 24, April, 1949, pages 44-5. SRV-STSM

The report of a survey made in Fort Worth, Texas, to determine what machine training was deemed essential, desirable, or unnecessary for stenographic, bookkeeping-accounting, and general clerical employees.

134. "Now the Electronic Clerk," U. S. News and World Report, Vol. 38, February 11, 1955, pages 50-2. TRD-EDP

Trend is toward need for more office workers yearly. The new machines will aid business in winning that battle with paper work--a battle which they thought was being lost before electronics came to their aid.

135. Null, Thomas W. "Office Machines Operators?--Certainly!" Journal of Business Education, Vol. 20, September, 1944, page 26. (Reprinted from Michigan Vocational Outlook.) CWB-TRG

Change in thinking resulted through the cooperation of the local Board of Education and the State Board of Control for Vocational Education. Instead of businessmen thinking they would train their own machines operators, it was now possible to train them properly in the high school.

136. "Office Jobs: Pay and Pay Prospects," Changing Times, Vol. 10, June, 1956, pages 41-3. TRG-FTR

"Learn how to run various machines that do billing, calculating, bookkeeping, tabulating, and so on. As business grows in complexity, machines do more and more of the office work. Survey shows that in the next four years, the need for machine operators will double."

137. "Offices Short 600,000 Workers," Nation's Business, Vol. 43, December, 1955, pages 64-7. NST-TRG

This stresses the need, not only for more but better trained office workers. "A better training job will have to be done by the schools." One suggestion (among many) was to provide on-the-job training. For example, a Massachusetts insurance firm hires commercial teachers during the summer, has them work side by side with under-skilled employees with the hope of showing the under-skilled how work can be handled more efficiently.

138. "Offices Want Individuals, Not Simply Job Holders," Business Education World, Vol. 44, No. 2, October, 1963, pages 27, 37. ANAL-JOB

Miss Jones believes that employers could do much more in fitting the girl to the job. She suggests that the employer express interest in the individual in order to get the best that this market has to offer.

139. O'Toole, Thomas. "White Collar Automation," Reporter, Vol. 29, December 5, 1963, pages 24-7. EDP-FTR

Office automation is bound to accelerate before it slows down. But "the hundred thousand office workers now being dislocated by computers," one economist summed it up recently, "will be a spit in the ocean to the armies of clerks being bumped by the computers of the seventies."

140. Partin, Willie Curtis Wright and Dial, Fred W. "A Course in Business Machines," Balance Sheet, Vol. 27, No. 3, November, 1945, pages 84-7. SEC-RCM

In this article, dictating machines are listed as first in importance; next, duplicating, with calculating and computing machines taking third place. Suggestions of time are given for work on the various machines, suggestions for teaching procedure, equipment, and testing.

141. Payne, Vernon W. "A Study of Business Education in the Public Secondary Schools of New Mexico," Dissertation Abstracts, Vol. 13, Publication No. 6305, 1953. SRV-RCM

General information on business education with recommendations for curricular materials (among other things) to be brought up to date.

142. Perry, Clark. "Arithmetic Fundamental to Machine Instruction," Journal of Business Education, Vol. 18, No. 7, March, 1943, pages 19-20. NST-RCM

This writer says that a student must have a thorough knowledge of arithmetic, proceeding then to present examples in division, discount and per cent, and price per hundredweight.

143. Peterson, Harold R. "Office Machine Practice and the Improvement of its Instruction," The Balance Sheet, Vol. 24, October, 1942, pages 65-7, 96. TRG-STSM

The author, an official of the Liberty Mutual Insurance Company, describes the plan used in his company for giving on-the-job training for the various machines.

144. Pilkenton, Kenneth U. "An Investigation of the Duties of the General Office Clerk," American Business Education Digest, Vol. 1, May, 1945, pages 211-2. TRG-STSM

The report of a Master's thesis at the University of Southern California lists the duties performed by clerks in weighted rank order, and lists the ones which the businessmen felt should and should not be learned on the job.

145. Piraino, Thomas A. "People and Procedures," The Office, Vol. 57, No. 5, May, 1963, pages 297-9. MGT-TRG

This article emphasizes the importance of people in relation to tools and techniques of systems and procedures improvement, stating that many bulky and expensive procedures can be eliminated if we have more faith in people. Incompatibility between management and

employees is furthered also in the drive to systematize and automate the office, moving the white-collar workers one step further from company objectives.

146. Place, Irene. "Evaluation of the Office Practice Program," National Business Education Quarterly, Vol. 22, No. 2, Winter, 1953, pages 31-7. ANAL-JOB

"Office work is to a business organization what a blood stream is to an individual--an artery, a service agent, a lubricant." An office training program can really be evaluated by the success of its products.

147. Plummer, Morgan H. "Machines to Fit the Job," Journal of Business Education, Vol. 29, No. 4, January, 1954, page 157. EQT-JOB

New devices with unbelievable capabilities reported in this article. Description is given of the installation at the John Hancock Mutual Life Insurance Company: Dictating machines, common language machine, punched tape system, reading-printing machine, and Travel-Talk. These machines all indicate trends in office equipment, and business teachers should keep their students informed of office equipment modernization.

148. Porter, Gerald A. "Instruction in Office Machines," Business Education Forum, Vol. 9, February, 1955, pages 28, 42. TRG-SEC

Emphasizes the necessity for teachers to have production standards in office machines instruction.

149. Potter, Thelma Maude. "An Analysis of the Work of General Clerical Employees," The National Association of Business Teacher-Training Institutions, Bulletin No. 39, December, 1945, page 59. NST-JOB NO AN

150. Potter, Thelma Maude. "Current Trends in Unit Planning for Office Machines," Eastern Commercial Teachers Association Yearbook, 1942, pages 169-75. CRS-STSM

In addition to developing the principles of machines unit instruction, the author discusses the objectives of such instruction, the time required for training, and a suggestion for short training courses to run throughout the school year.

151. Potter, Thelma Maude. "The Teaching of Office Machines; Methods, Techniques, and Standards," American Business Education, Vol. 4, May, 1948, pages 266-8, 276-7. TRG-NST

"The procedures and techniques change for every job performed but the way of thinking through a piece of work doesn't change. Our responsibility as teachers is best discharged by giving students this unchangeable skill which can be used in any job, in any office, and any level of work."

152. "Programed Training of Office Workers," The Office, Vol. 57, No. 5, May, 1963, pages 86-91, 270-7. TRG-EDP

This article points out that managers are using programed instruction adapted from the Pressey idea of progressing to new learning upon responding correctly. Some companies are experimenting with teaching machines controlled by computers, which regulate questions in speed and difficulty according to the response or intelligence of the learner.

153. Puckett, Cecil. "Trends in Business Education," NEA Journal, Vol. 39, February, 1950, pages 34-5. SEC-TRD

The purpose of the high school business program should be two fold: (1) To provide an opportunity for students to acquire skills and knowledges which may be used as tools to earn a living in the functional areas of business. (2) To provide opportunities for all youth to acquire general information which will later better fit them to take their places in the economic and social life of their communities.

154. Reagen, Mary Joan. "A New Deaprtment--A New Outlook!" Balance Sheet, Vol. 38, February, 1957, pages 251-3. RCM-SEC

This article was written in the hopes that the experiences of reorganization might help other schools in establishing a new business department or reorganizing the old one.

155. Reed, James Ralph. "Circumstances Surrounding the Employment of Beginning Office Workers in Oklahoma City," Dissertation Abstracts, Vol. 15, Publication No. 14019, 1955, page 2443. SRV-JOB

One conclusion, among many, was that beginning office workers are unable to perform tasks which are basic to their occupational classification; other conclusions: accuracy most frequently deficient; duties to be performed by office workers always go far beyond their work classification; secretarial and accounting positions hardest to fill.

156. Regis, Sister Mary. "Some Problems and a Few Suggestions," Business Education World, June, 1945, pages 565-6. RCM-SEC

Gives the usual set-up for a rotation plan in teaching but offers two hints in the teaching of calculators: The use of the answer bock or key permitted the students in order to find errors before progressing too far to give them the sense of reasoning out why; also, letting two students work together on a calculator, they seemed to get more from the course.

157. Reuter, Helen M. "A Study of Equipment in Business Departments in Ohio High Schools in Cities of 6,000 to 23,000 Population with Special Reference to Such Equipment in Fremont High School," Unpublished Master's Thesis, The Ohio State University, 1939. EQT-STSM NO AN

158. "Revolution in Office Work; How Automation is Taking Over," U. S. News and World Report, Vol. 46, May 4, 1959, pages 66-71. FTR-EDP

Machines will not displace workers as there are now 100,000 more

workers in office occupations than a year ago, seven times as many as 50 years ago. Instead of displacement, workers are up-grading to the more interesting jobs. Even with new mechanical aids, clerical tasks continue to increase.

159. Reynolds, W. T. "Office Machines--Plan Before You Purchase," Office Executive, Vol. 27, March, 1952, pages 18-20. EQT-JOB

Discusses necessity of selection according to need and cost in order to make a profit in business.

160. Roberts, Ruth L. "Desirable Standards and Practical Measurement of Achievement on Office Machines," Business Education Digest, Vol. 6, No. 1, March, 1942, pages 52-4. SEC-MST

The three skills available on office machines--acquaintanceship level, functional level, and vocational level--are discussed here. The type of course which is chosen depends upon the community need, the amount and kind of equipment, and the place in the curriculum. Community need is most important because it is that larger community which will give the student his later employment. This writer recommends canvassing the community, listing the machines and analyzing their work to find the particular jobs on which training should be given.

161. Robinson, Julius M. "Teaching Business Machines Course in a Small High High School," Business Education Digest, Vol. 5, No. 1, March, 1941, pages 109-12. NST-SEC

This describes personal case in Peking High School in Illinois. The writer's objectives in the course were to teach the fundamental skills and a thorough understanding of business applications of machines rather than to produce highly skilled operators.

162. Robitaille, Louis J. "Purchasing, Maintaining, and Replacing Office Machines," UBEA Forum, Vol. 9, May, 1955, pages 30-1. EQT-SEC

Discusses rental, purchase, maintenance, and service of office machines.

163. Ross, Allan J. "Recent Developments in Business Machines," American Business Education, Vol. 25, No. 4, May, 1959, pages 208-11. TRD-EQT

"The only measure of its justification and success is the degree to which it enables an individual to achieve a desired result faster, easier, and more accurately. However simple or elaborate the machine may be, it will accomplish only what it is made to accomplish by human operators."

164. Roughsedge, M. Gertrude. "Training Calculating Machine Operators," Journal of Business Education, Vol. 15, No. 7, March, 1940, pages 21-2, 24. CALC-TRG

This writer believes that teacher training given to prospective teachers of typewriting should also be given to teachers of

calculating machines. That is to say, that the latter field is in as much need of methods instruction as is the former.

165. Roughsedge, M. Gertrude. "War Time Problems in the Calculating Machine Classes," Eastern Commercial Teachers Association Yearbook, 1943, pages 341-8. CALC-STSM

The author discusses the common attitude of business teachers toward machine training, outlines a program, and includes samples of problems and times for working.

166. Ruegg, Robert J. "Starting from Scratch in Office Practice?" Business Education World, Vol. 37, February, 1957, pages 32-3. CRS-SEC

This discusses how to schedule an office machines course; how many machines will serve how many students for how long.

167. Ryan, D. J., Jr. "Central Tabulating in Detroit Department of Public Welfare," American City, Vol. 57, March, 1942, pages 52-3. GVT-TRD

From 1939 to 1942, employees in the Central Check-writing Division were reduced from 59 to 34. This article gives details and examples of the use of tabulating equipment and the value it is to an office of this nature--efficient, economical, and convenient.

168. Schlauch, W. S. "The Use of Calculating Machines in Teaching Arithmetic," reprint by Monroe Calculating Machine Co. of an article in The Mathematics Teacher, January, 1940, pages 35-8. CALC-STSM

A report of a study made in New York City on the effect in learning arithmetic of using calculating machines compared with using paper and pencil. The article also reports on the findings of a doctoral study made in California by F. G. Marsh on the same problem.

169. Schuette, Amanda. "A Follow-up Study of the Graduates of 1947 in Green Bay, Wisconsin, Public High Schools," The National Business Education Quarterly, Vol. 18, Fall, 1949, pages 26-30. SRV-STSM

This study asked among other things, "What courses would you take if you were to go back to high school and the following courses were offered?" and found machine calculation placing second on the list of courses desired.

170. "Setting Work Standards," Administrative Management, Vol. 24, September, 1963, pages 65-7. MST-JOB

This article elaborates on the uses and need for work measurement. A study would reveal which present duties were unnecessary, permitting economy in existing methods; also whether the workers are doing work of their caliber.

171. Sevenich, Antonia M. "A Survey of the Office Machines Used in the Port Washington, Wisconsin, Area," Master's Thesis, The University of Wisconsin (Madison), 1956, 46 pages; National Business Education Quarterly, Vol. 27, October, 1958, page 66. SRV-JOB

Purpose: (a) To find out whether the school program is preparing office personnel to meet the demands of business in the area. (b) To assist school personnel in setting up a training program for future office employees. (c) To aid school personnel in the selection of additional training machines.

172. Showalter, Lehn H. "Some Problems in Teaching Machine Posting," Journal of Business Education, Vol. 15, No. 5, January, 1940, page 20. NST-SEC

This lists nine common causes of posting and proving errors and states that there is no panacea offered, but the cure must come from the student himself.

173. Sister Mary Marcia, RSM. "Selling the Machines Course," Balance Sheet, Vol. 35, May, 1953, pages 388-9, 399. TRG-SEC

This business course, dependent upon an academic basis, uses history, English, and two years of Spanish required of all business students. Business students are divided into secretarial, bookkeeping, and clerical. The business major is selected in the junior year, and this specialization requires intensive training. High IQ's are required for bookkeeping or secretarial. This is an interesting article which shows the detailed description of an office machines course and its workable operation in this high school.

174. Smith, Lois. "Grading in Office Machines Classes," Balance Sheet, Vol. 44, February, 1963, pages 253-4. MST-SEC

Suggestions given for developing your own grading scale for various office machines.

175. Specht, Joseph F. "Modern Business Calls for Modern Machines," Journal of Business Education, Vol. 33, March, 1958, pages 248-52. EQT-JOB

Modern business calls for modern machines in order to furnish an employable skill. Requires scientific planning and layout.

176. Specht, Joseph F. "Training on Office Machines Helps Accounting Students," Business Education World, Vol. 37, April, 1957, pages 19-20. TRG-SEC

This points out the advantage of having bookkeeping or accounting students use their skills and knowledge gained on office machines or in office practice in applying it in an accounting course.

177. Spindler, Charles R. "Business Machines for School Laboratories," Education, Vol. 18, No. 7, March, 1943, pages 15-6. SRV-EQT

The editor suggests in his note to this article that the reader evaluate the efficiency of the teaching and use of the machines in the terms for which they were purchased, and make sure that every machine is performing a full-time duty.

178. Spindler, Charles R. "Criteria for Selecting Business Machines for School Laboratories," Unpublished Master's Thesis, University of Iowa, 1942. EQT-STSM

A survey of 140 schools made to discover their views on various methods of selecting equipment, plans for teaching machine courses, plans for organization, and teacher requirements.

179. Stander, Norman E. "Basic Elements in Reliability Training," Personnel, January, February, 1964, pages 70-4. MGT-TRG

One way to eliminate the chance of human error of a systems' eventual performance is to remove the worker. This, automation is doing to a certain degree. However, the human operator is here for quite a while. The program designed to motivate a man to produce work of high quality must take into account his group-related needs and his personal ones. Such a program must incorporate five essential elements.

180. Stein, Lawrence W. "The Case for Office-Machines Courses," Business Education World, Vol. 36, February, 1956, pages 16-7. EQT-SEC

Compares the cost of office machines with typewriters to prove that equipping an office machines room is not as expensive as its opponents seem to believe. Says that the replacement of typewriters is more expensive than other machines by 75 per cent.

181. Strauch, Juliabel. "A Survey of the Office Duties and of Employers' Evaluations of Office Employees in Thirty-two Business Offices in the Pekin, Illinois, Employment Area," Review of Business Education, Vol. 46, August, 1949, pages 26-31. SRV-STSM

The report of this Master's study lists the office duties of clerical workers in frequency of performance, including machine operation.

182. Stuart, Mary. "Modernizing the Objectives, Content, and Organization of Clerical and Machines Courses," National Business Education Quarterly, Vol. 10, March, 1942, pages 43-5. CRS-SEC

Discusses need for type of training necessary after the war. One point made shows difference was that clerical and machine practice should not be limited to pupils on the commercial course--the college prep group could and would benefit from the study of filing, calculating, transcription machines, etc.

183. Stutsman, Galen. "Is Adding-Calculating Machine Training Necessary?" Journal of Business Education, Vol. 29, January, 1954, pages 165-6; February, 1954, pages 210-2; March, 1954, pages 244-6. CALC-ANAL

This is a three-part article with subheading of the first as follows: "Most studies of business offices have shown that, after the typewriter, adding and calculating machines are most frequently used by office employees; and such investigators usually conclude that we should, therefore, offer training on these machines in our business training program."

184. Stutsman, Galen. "Levels and Comptencies in Office Machines," American Business Education Yearbook, Vol. 13, 1956, pages 81-90. STD-SEC

Discussion of the status of standards, saying that business wants standards. Gives sample standards (gleaned from recent reports) for operation of a few of the more common office machines (pages 86-8).

185. Sutton, Mary Etta. "A Survey of Office Machines in Use and Available Job Opportunities for High School Graduates in the Manufacturing Industry in Muncie, Indiana," Master's Thesis, Ball State Teachers College, Muncie, Indiana, 1953; NBEQ, Vol. 23, October, 1954, page 87. SRV-JOB

Purpose: To locate the various office-job opportunities for the high school graduate in the manufacturing industries of Muncie, Indiana; to list the office machines in use by high school graduates on the initial job; to determine employment requirements; to find out what questions employers ask a beginner during an interview. Materials and methods: Personal interviews, using check lists, with office managers in 54 industrial firms.

186. Swanson, Edwin A. "Changes in the Content of Business Courses of Study for Office Workers to Suit Present and Future Needs," NBEQ, Vol. 9, March, 1941, pages 25-32. PHL-TRD

Philosophical discussion of the subject. The latter part bears examination, wherein the author criticizes: "Most sectional meetings of the national conventions of the American Vocational Association where speakers say 'give us better students'... This type of vocational education does not lend itself to the training of below-average students...'steer the poor students into something else.'" The writer says that this field of area of business education is broad enough and inclusive enough to have room for almost all levels of student ability.

187. "Teamwork with Business Is Trend of Education," School and Society, Vol. 66, August 16, 1947, pages 119-22. CWB-BSch

The "teamwork trend" appears in areas which may be described under five different headings: (1) Determining the objectives of business education, (2) Development of course content, (3) Selection of students for specific training, (4) Selection of teachers who have intimate knowledge of their field as well as a keen understanding of business policies and procedures, and (5) Correlation of work and training.

188. "Tell It to the Machines," American City, Vol. 52, October, 1937, page 7. EQT-TRD

Tells how the city and county departments lead in the use of dictating equipment. They have added methods which will permit them to get their work done despite deficiencies.

189. "That Hard-Working Family of Tabulating Machines," American City, Vol. 64, February, 1949, pages 189-91. HST-EQT

Discusses the use of these machines for small operation, as well as for the large city for which it was first thought to be meant. Starting at the year 1908 and the first die-set punch, it goes

through 1947 and the Instantaneous Summary Punch (illus. page 189). These machines, though, had one trait in common--great speed and complete accuracy.

190. Thatch, Wayland B. "Offer Valuable Office Machines Training," Balance Sheet, Vol. 39, April, 1958, pages 348-51. SEC-EQT

Need for office machines is apparent because of increased use of machines in business. Cites need for these machines in small as well as large high schools. Says that the reasons schools were slow to accept machines classes was due to (1) cost, (2) attitude of administrators, (3) lack of qualified teachers. States the objectives of the course, the basic machines, the content, how to get started, work projects for each machine, and the final correlation of learning.

191. "The Office Worker and His Education," School Life, Vol. 44, April, 1962, page 24. TRG-JOB

The primary goal of the office education program is to meet national manpower needs by developing to the maximum the potential of those persons who will follow an office career.

192. "The Selection of Equipment for Office Practice Laboratories," The Balance Sheet, Vol. 28, March, 1947, pages 302-5. EQT-STSM

Besides outlining the equipment that should be in the office practice laboratory, the author sets forth a protest against demanding pre-requisites such as arithmetic for entrance into such a course. He further outlines the levels of competency to be sought in teaching the various adding and calculating machines.

193. Thomas, Ralf Jay. "A Survey of Business Education in the Public Secondary Schools and the Public Junior Colleges in the State of Kansas," Dissertation Abstracts, Vol. 14, Publication No. 7142, 1954, page 278. SRV-SEC

A criticism of the inadequacy of the business program. Mentions specifically: "Except for typewriters and duplicating machines, the number of office machines available for instructional purposes in most Kansas business departments is limited...There is a great need for more adequate supervision of business education in the state."

194. Thrasher, W. T. "Punched Tape Boosts Accounting Efficiency," American City, Vol. 73, June, 1958, pages 160-1. EDP-GVT

Five people instead of eight; 66 ledgers instead of 500; hours instead of days.

195. "Tomorrow's Office: It Runs Itself," Business Week, October 20,1956, page 25. EDP-FTR

Theme of 53rd Annual National Business Show in the New York Coliseum was "Automation Personified"--exhibition was a mass of tapes, punched cards, and memory drums. Office of 1970 features TV giving push-button access to stored away data.

196. Tonne, Herbert A. "Machine Training in the Schools," Journal of Business Education, Vol. 30, November, 1954, pages 61, 70. TRG-SEC

Reference is made to Stutsman's article in January, February, and March issues of JBE, 1954. "Is adding and calculating machine training necessary?" "While machine training is not uniquely necessary for securing employment in business jobs, such training should give considerable advantage in securing initial employment and is probably of significant importance in helping the new worker to adjust himself to the job." States that less than one per cent of all business workers are specifically machine workers. Mentions the handicap of being trained by a supervisor who has no conception of the teaching process and what it involves.

197. "Training for Office Occupations," Journal of Business Education, Vol. 23, October, 1947, pages 35-6. TRG-SEC

Discusses the variety of occupations in office work. Number of office employees, status of office training, groups served by training offered, also given treatment in the discussion; in the training area, instructional content, teacher qualifications, and professional leadership is discussed. Under "Business Trends in Office Training": (1) Better understanding of employment requirements, training standards, and teaching methods. (2) Emphasis on independence with respect to human relations, group responsibility, and opportunities for advancement, as well as the emphasis on skills. (3) Office training programs show, of course, that student has employable skill. (4) Supervisory training for department heads, junior executives, and managers. (5) State wants local supervision for all phases of business education, including training for the office occupations. (6) Demand for expansion for employment of services of the United States Office of Education with respect to business education.

198. "Training Ground for Technicians," Business Week, November 7, 1959, pages 76-7. TRG-CSM

Vocational training emphasizes manipulative skills; technical education emphasizes brain work and theory, training for jobs in fields like computers and missiles. These are very closely related but this editor says that you can't train the two in the same class. This article was written about a study made in Levittown, New York, Division Avenue High School, as part of NDEA in 1958.

199. Trytten, John Melvin. "A Study of the Relation Between the Equipment of Commercial Teachers and the Demands of Their Teaching Situations," Dissertation Abstracts, Vol. 12, Publication No. 3818, 1952. EQT-NST

"Several of the conclusions or confirmations of the observations frequently heard: That a significant number of teachers have a narrow concept of education; that they persist in loyalty to the few traditional office skills; and they are content to pass on to students the learning that they received, justifying the criticism that they are preparing the students for the business world of yesterday." Recommendation is given that the teacher should adjust to situations that are unexpected.

200. UBEA Forum, 1957, 62 pages. HST

100 years in Business Education, and inventory of business education issued on the occasion of the centennial year of NEA, Washington, D. C.

201. U. S. Labor Statistics, Bulletin No. 1255, Occupational Outlook Handbook, 1959, pages 224-38. JOB-FTR

In 1958, 3 out of 10 employed women were clerks. Office machine operators are usually assigned one job to do on a particular machine; jobs are repetitive. Billing machine operators make up one of the largest groups of operators of mechanical office equipment.

202. VanDerver, Elizabeth A. Tilton. "A Study of Patterns of Performance for the Most Frequent Duties of Beginning Clerical Employees," Dissertation Abstracts, Vol. 11, Publication No. 2516, 1951. ANAL-JOB

Observation of beginning clerical workers in 17 different business organizations. "The operations selected for study were determined by an analysis of nine outstanding surveys of clerical work. The 69 most frequent operations of the office clerk resulted from this study and constitute the essential basis for training clerical workers.

203. Vinocour, S. M. "The Trend Toward the Trained," National Business Woman, Vol. 36, January, 1957, pages 16-7. PHL-JOB

This article was directed to the Business Professional Women's Club members (BPW) across the country, telling them that they could counsel and guide young girls so that they could better visualize the business world and so that they could obtain the best possible training. It directs these women to elevate the whole business education field by proposing changes and new methods to the business educator--ideas drawn from BPW's experiences.

204. "Visual Aids--Motion Pictures in Office Practice," Education for Victory, Vol. 2, No. 10, November 15, 1943, page 8. TRG

This lists and describes several films which were produced by the Navy to help train office workers. There are 8 in the group, one of which is "Maintenance of Office Machines," emphasizing a number of ways in which machines can be protected against dust, dirt, and carelessness.

205. Vorachek, Georgette. "A Survey of Office Machines in the Selected North Dakota High Schools," M. A. Thesis, University of North Dakota, (Grand Forks), 1960, 89 pages. SRV-SEC

Of 227 questionnaires and letters, 87 per cent or about 190 responded. These were from fully accredited secondary schools. Summary of findings: (a) Office machines were used by teachers, students, administrators, (b) Machines instruction given in the twelfth grade, rotation plan offered in 47 schools, (c) Combination of textbook and office company materials used in 41 schools for

office machines courses, (d) Office machines equipment was reasonably up-to-date, (e) 65 teachers stated that their machines greatly resembled those used in local offices, (f) 89 business teachers were using all machines available, and (g) 72 indicated additional machines were needed.

206. Walker, Robert Douglas. "The Cost of Equipping High School and Junior Colleges Business Education Classrooms," Dissertation Abstracts, Vol. 20, Library Card Mic 59-6403, 1959, page 3170. EQT-SEC

Lists itemized cost of equipment for office machines classrooms as well as furniture, etc. Emphasis is on cost. Suggest additional research for developing equipment standards and their related costs for all instructional areas.

207. Wallach, Jack. "Miss Pushbutton, Take a Letter," Nation's Business, Vol. 35, February, 1947, pages 60-2. TRG-EDP

Implies very definitely that machines are becoming more and more complicated and expensive--billing machines, calculators, duplicators--that no specific training should be required because schools just can't keep up with business in equipping on an equal basis.

208. Waterman, Letha H. "A Survey of Key-Driven Calculators in Columbus, Ohio, With a Suggested Syllabus for a Course of Study," Unpublished Master's Thesis, The Ohio State University, 1941. CRS-STSM

The study reports on 142 questionnaires and 7 personal interviews made in Columbus in 1940. Items covered were number of machines used, operators employed, kinds of work done on machines, other duties performed, weaknesses of operators, and reasons for discharge.

209. Weeks, Edwin, Jr. "A Study of the Expressed Employment Needs of Employers in the Syracuse Metropolitan Area with Implications for the Office Occupations Program in the Syracuse Public Schools," Dissertation Abstracts, Vol. 22, 1962, page 3898. ANAL-JOB

Purpose: To determine whether the schools were meeting the needs of business in the area. Problem included investigating informed managers and personnel representing executives in Syracuse business firms.

210. Wein, Dorothy. "Initial Employment of the High School Graduate of a Commercial Course," High Points, Vol. 22, October, 1940, pages 22-7. JOB-SEC

What the employer wants: Versatility in order to provide opportunity for transfer from one job to another and in order to train for supervisory work. Skills make up only about 10 to 35 per cent of the worker's employability.
What the employer is getting: Inaccuracy, volume of work too small in transcription and carbon work, too much talking to neighbors, too much delay between jobs.

211. "What I Would Do About Ditto If I Were Miss Davis," Business Education World, Vol. 29, April, 1949, pages 492-4. JOB-CSM

This expresses the need for business to do more than furnish charts on the operational use of office machines. Says that the representatives should talk directly with business teachers to tell why and how business uses their equipment.

212. "What Should the Office Do?" Dun's Review, Part II, Special Report on the Office, September, 1962, pages 896-9. ANAL-JOB

This is a discussion of how the functions of the office are changing, due to new tools and techniques.

213. "What's New for Cities in Business Machines," American City, Vol. 53, November, 1938, page 79. GVT-TRD

Describes "new" calculator (National Business Show in New York), Elliott tax bill Printer; addressing machine, general accounting machine, bookkeeping machine for register posting, as well as for adding and subtracting, Burroughs Fanfold Order-Writing machine described step-by-step.

214. "White Collar Jobs Blossom Again," Business Week, April 25, 1959, page 32. JOB-TRD

Recession over, demand for workers is up. We need people who can use their heads, who can assemble data to be used in the computers. Instead of secretaries handling so much dictation, more jobs are opening up for transcription machine operators, and the secretaries are being released and needed for decision-making tasks.

215. "Why the Rush?" Dun's Review, Annual Office Report: "The Decision That Can't Wait," September, 1961, pages 4-5. TRD-EQT

This article is concerned mainly with office equipment but some interesting facts are revealed regarding clerical activity--"From 1950 to 1960, the number of clerical workers in the nation rose by 28.9%--a rate of growth nearly as great as even that of the Gross National Product." This implies that company overhead is going to consist, more and more, of clerical salaries, expensive floor space, fringe benefits, and lost hours of coffee breaks... In other words, that mushrooming clerical force is threatening to become a truly vast business expense, possibly outweighing in time such other major costs as raw materials, distribution, and transportation.

216. Wilsing, Weston Clarence. "An Appraisal of Business Education in the Urban and Rural Public High Schools in the State of Washington," Dissertation Abstracts, Vol. 20, Library of Congress Card No. Mic 59-3352, 1959, page 971. CSM-SEC

"Some employers scored the public high schools for not providing specialized office machines instruction; that the schools were not turning out enough employable graduates in the occupational areas in which they were furnishing training; weaknessess of graduates were in attitudes, character traits, and fundamentals."

217. Wuthenow, Edith Veronica. "In-Service Training Programs for Clerical Workers: An Analysis of the Formal Training Programs Conducted by Selected Business Firms for Their General Clerical Workers," Dissertation Abstracts, Vol. 14, Publication No. 7144, 1954, pages 621-2. TRG-JOB

Tells what businessmen expect of their beginning employees. "Many New York City business firms conducted training programs designed to train new employees in clerical skills and to orient them to their firms. The aim of this study was to examine the programs and study their organization's aims, methods, and materials for the purpose of improving the clerical programs in the New York City schools." Members of NOMA conducted this study by mail; 36 firms were selected for study.

218. Yanney, R. H. "Office Machines and Office Careers," Journal of Business Education, Vol. 23, June, 1948, page 31. TRG-STSM

An official of the Hoover Company makes recommendations to potential office workers as to what machine training they will need for success on the job.